

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Joint Petition of Green Mountain Power Corporation,)	
Vermont Electric Cooperative, Inc., Vermont Electric)	April 4, 2011
Power Company, Inc., and Vermont Transco LLC,)	
for a Certificate of Public Good, pursuant to 30 V.S.A.)	Docket No. 7628
Section 248, for authority to construct up to a 63 MW)	
wind electric generation facility and associated facilities)	
on Lowell Mountain in Lowell, Vermont, and the)	
installation or upgrade of approximately 16.9 miles of)	
transmission line and associated substations in Lowell,)	
Westfield and Jay, Vermont.)	

REPLY BRIEF OF THE JACK BROOKS FAMILY

Introduction:

Jack Brooks and his family live on over 900 acres abutting GMP's proposed industrial wind turbine project. According to Green Mountain Power's ("GMP") map showing the location of the turbines, Exhibit. Pet.-IAJ-2, the Brooks family's property lines are 313 feet, and the Brooks' residence is approximately 2,000 feet (0.378787 of a mile) from turbine 21.¹ LMG Brooks Pre Filed Testimony pp.1-2; Exhibit.-Pet-IAJ-2; Exhibit A- Krebs & Lansing 2/23/11.² The Brooks family owns the southern half of the eastern flank of the Lowell Mountains. Bigalow Basin is on the Southern portion of our property and over the ridgeline of one hill and to the top of another hill. The view from

¹ See Appendix for GMP's chart calculating distances from non-consenting abutting property owners to turbines.

² GMP's newest map, ANR MOU Exhibit A (revised), has incorrect boundary lines. The Brooks property includes part of the ridgeline, which this map shows as part of the GMP project site. See the location of turbine 21 and of the lands belonging to Jack Brooks and Laura Jacoby. The deeds to the Brooks property shows that the property line dividing the Brooks property from the Green Crest Inc property should be moved further to the west so that it would be just beyond turbine 21. As Mr. Jewkes testified, he did not perform the boundary surveys for the project and is not verifying the accuracy of the boundary lines on GMP's maps. Jewkes Trial Testimony 2/3/11 pp.227, 229.

our residence looks at this ridgeline and north approximately another 1 mile of the ridgeline. LMG Brooks Pre Filed Testimony p.4.

As of the writing of this reply brief, GMP has failed to present the Board with any evidence regarding the impacts that its proposed project will have on the Brooks family. In addition, there has been no verification from GMP to the Board that the property lines upon which they are relying are accurate; in fact, Mr. Jewkes declined to verify the accuracy of any boundary lines. Jewkes Trial Testimony 2/3/11 pp.227-229; *see also* footnote 2, p.1 Brooks Reply Brief.

Argument:

GMP continues to state it meets statutory criteria, brushing aside the details of this project and focusing instead on generalities and spoken assurances that incomplete studies are either not necessary or will be forthcoming only after a Certificate of Public Good (“CPG”) has been granted. GMP downplays any contrary evidence of adverse impacts by touting repeatedly the project’s supposed benefits and by emphasizing the relatively low number of people proximate to the project. However, careful review of the docket and of GMP’s brief shows that GMP’s assertions are without substance and that this project does not meet the statutory criteria required for the Board to grant GMP a certificate of public good.

I. GMP fails to present the Board with adequate evidence for the Board to make a decision: answers have not been provided to many questions of grave concern to the people and to the environment.

A. SAFETY:

Nowhere in GMP’s evidence or its brief does GMP tell the Board what effect its project will have on the Brooks family property, what risks and dangers may be posed.

Even more problematic is GMP's supposed belief that the Board will rubber stamp its project as presented, even though lacking in many important details, as evidenced by GMP failing to provide the Board with any substantive plans detailing safety issues and protocols. These omissions involve important safety issues such as: ability of emergency vehicles to access the roads leading to the site, transportation of the turbines, blasting, construction, the presence of potentially hazardous substances on site, testing or protocols to determine on-site contamination, the actual efficacy of the NRO mode, safety buffers, access to the site in hazardous weather conditions, or response to emergency situations, just to name a few.³ *See, e.g.*, Trial Testimonies LeBlanc 2/10/11 p.198, 201-202, 213-214; Jewkes 2/3/11 p.232-233, 242, Esty 2/4/11 pp.244-245; Kaliski 2/22/11 pp.101-102; Exhibit-Pet-CP-7 p.7 (listing several concerns of the Missisquoi Valley Ambulance Service as of yet unanswered).⁴

Employing GMP's claimed property line distances of 313 feet, this project will not protect the Brooks' safety, nor that of their invitees or any other person legally on their land. Exhibit A- Krebs & Lansing 2/23/11. GMP's own expert admits that as designed, GMP's project will not meet safety setbacks. LeBlanc Trial Testimony 2/10/11

³ The extent of GMP's inclusion of these vital safety concerns is: a preliminary blast plan; mention of the oil and containment systems located at the two substations; vague mention of periodic notifications to local emergency response teams; training to emergency response personnel and provision of equipment. Jewkes Trial Testimony 2/3/11 p.232; Pughe Pre Filed Testimony at 2, Trial Testimony 2/3/11 pp.102-103; Esty Trial Testimony 2/4/11 pp.241-243.

⁴ These omissions are in addition to those regarding noise, aesthetics, environment and nearly every other statutory criteria. In their Order, dated 9/3/10, the Public Service Board granted Mr. Brooks intervention as follows: "We grant Mr. Brooks' motion on a permissive basis pursuant to PSB Rule 2.209(B) to address the particularized impacts the project would have on the main water supply serving his property, as well as the impacts of noise and ice throw onto his property. On these topics, Mr. Brooks has demonstrated a particularized interest that is not represented by other parties." Accordingly, this reply brief is focused on those issues.

pp.201-202, 213-214.⁵ He also notes that his safety review and recommendations do not include dangers from transportation of the turbines or construction, *Id.* at 198-199, bolstering the Brooks' concerns that GMP has chosen not to provide the Board with anything of substance in the record to determine what is necessary to protect residents from dangers implicit or possible as part of these other facets of the project.

In its brief, GMP downplays the possibilities of ice throw, tower failure, collapse and shadow flicker. Yet, GMP's expert stated that turbines throw ice up to 300 meters away, more than 3 times further than GMP's stated boundary from the Brooks' property. LeBlanc Trial Testimony 2/10/11 p.197. An entire blade can be thrown 150 meters [492.125 feet] and a blade fragment, 500 meters [1640.419 feet]. Exhibit-Pet-ML- 4 p.2. The main causes of the blade and tower failures are a control system failure leading to an overspeed situation, a lightning strike or a manufacturing defect in the blade. LeBlanc 2/10/11 p.198; Exhibit-Pet-ML-.5. Blade failure can happen more frequently than tower failure. A structure failure occurs on the skin that surround the turbine usually from a lightning strike, and what occurs is that they open up and, typically, would drop a part; the blade would fall apart and land on the ground. LeBlanc Trial Testimony 2/10/11 p.210. GE recommends that the turbines should be set back at 1.5 X hub height + Rotor Diameter. Exhibit-LMG-Blomberg-13.⁶ Given the distance that ice can be thrown or dropped and that the turbines, standing 459 feet tall, can collapse, GMP's proposed 60 meter [196.850 feet] setback is offensive and insufficient. *See* Pughe Trial Testimony 2/3/11 p.86.

⁵ Mr. LeBlanc was referring to the Nelsons' property line of 200 feet from the closest turbine. The Brooks family's 313 foot "buffer" equally fails to meet safety requirements.

⁶ See Appendix for GE recommended distances and data.

Although GMP dismisses these potential dangers as inconsequential, they are not so for the abutting property owners, who should not have to limit their use and enjoyment of their property for fear of danger caused by GMP, *see* LeBlanc 2/10/11 at 216, nor limit the economic viability of their property. This is especially relevant since GMP's safety expert agreed that it is reasonable to make certain that the turbines are as safe as possible, and it is possible to move the turbines far enough away from another's property so that neither ice nor a turbine's tower could fall on their property. LeBlanc at 202, 214.

LeBlanc notes the importance of strictly followed safety protocols that begin with installation and continue with maintenance, repair, and monitoring. Trial Testimony 2/10/11 p.199. Yet, despite this import, and as noted above, GMP has failed to provide the Board with any of these plans. Even more concerning to the Brooks family, GMP repeatedly has failed to promptly fix a failure with the existing meteorological towers, Docket #7558; *see also* LeBlanc Trial Testimony 2/10/11 p.201, which do not pose nearly as many dangers as do the 21 turbines. GMP's reference to inclement weather as the reason for not fixing the problems with the meteorological towers does not bode well for its ability or capacity to effectively handle the turbines during the adverse weather conditions that are frequent in the Northeast Kingdom throughout the winter, and even worse on the mountaintop.

GMP's brief fails to specify which turbines "present a safety risk to the public," *see* GMP's proposed decision p.28, and how its safety protocol will actually work, preventing the opportunity for other parties to comment. Again, GMP's past failure to access the Meteorological Towers in inclement weather should cause the Board concern since some of the mentioned protocols involve on-site monitoring. GMP further has

failed to provide the Board with any standards for lightning prevention, which causes turbine failures. *See* LeBlanc p.210.

GMP has glossed over these details or completely omitted them, yet to the people living in proximity to the project, these details are vital. Certainly, the Board should not grant a CPG to a project of this magnitude unless and until it has been adequately assured, through detailed plans rather than only by verbal assurances, that the developer has taken all means necessary to ensure safety. Indeed, the potential safety risks extend to GMP's own employees who will be working on site; certainly, GMP should present the Board with adequate plans for their safety as well, rather than simply stating that OSHA requirements will be followed. Pughe Trial Testimony 2/3/11 p.86.

B. VISUAL AESTHETICS:

In its brief, GMP continues to minimize the undue adverse impacts that this project will cause by inaccurately claiming low numbers of affected houses, discounting the impact on the people who will live with the turbines every day of their lives, and creating distinctions that are not part of a *Quechee* analysis.

First, GMP insists that the conclusion reached by the Department of Public Service ("DPS") that the project will be shocking and offensive applies only to 20 homes when the record clearly establishes it applies to 120 homes and impacts an area that spans 3 miles. Kane Surrebuttal p.5; *and* Exhibit-DPS-MK-SUR-1; *see also* LMG Surrebuttal p.1. It further minimizes DPS' conclusion by stating that these "key viewpoints" are associated with private residences, therefore implying they should be discounted. GMP brief, p.7, note 35. Expert Witness Kane vividly explains the extent of impact these turbines will have for people like the Brooks family: "The project will become part of

the visual fabric within this community....” Kane Surrebuttal p.5. “The ubiquitous nature of the array along the most prominent ridgeline in the landscape creates an unduly adverse condition.” Kane Pre Filed Testimony p.11. Not only will the turbines be starkly visible at residences, but also in public areas and on roadways within this area and throughout the ten mile viewshed.

Second, GMP dismisses undue adverse aesthetic impacts by attempting to distinguish impacts on private property owners from those on public views. See GMP brief p.4. This project contains undue adverse impacts on both, making GMP’s attempted, and unsupported, distinction without merit. Despite the fact that there are as many as 120 residences that will suffer undue adverse impacts, there are also public views throughout the area, ranging from the historic Bayley-Hazen road, Long Trail, Belvidere Fire Tower, Tillotson Camp, VAST trails, the Catamount trail, and the Wild Branch Wildlife Management Area to roadways through the Northeast Kingdom, such as Route 100 and 14. See DPS brief p.19 referencing Kane Pre Filed Testimony pp8-9; DPS-MK-2. Figure 12; Buck Surrebuttal pp.3,6. In fact, the project will be visible to 25% of the land area within the 10 mile viewshed. Kane Pre Filed Testimony pp6-7; Exhibit-DPS-MK-2, Figures 6-8. Mr. Raphael’s attempt to limit the impact on roads by stating they must have scenic designation. Mr. Kane states that public roads are important public vantage points and that Mr. Raphael’s distinction is not appropriate for the *Quechee* test. Trial Testimony 2/9/11 pp.47-49. No analysis was performed as to the impact of the turbines on my property, but given the extent of their dominance within 3 miles, a conclusion that they would not be unduly adverse is implausible. Furthermore, doesn’t my family count as members of the public? When more than 120 homes may be

impacted, this goes well beyond what GMP would have this Board believe are only private issues. My family, as well as the dozens of others whose property will be impacted are members of the public and deserve this Board's consideration.

Third, GMP further dismisses conclusions that there will be an undue adverse impact by telling the Board it will use the OCAS system. As the project stands now, with the turbines' required FAA lighting, nine sets of strobing red lights standing over 400 feet above the 2500 plus foot elevation of the Lowell Ridgeline will dominate the nightscape. *See Exhibit- DPS-MK-p.11*. In its brief, GMP states that "Assuming they [GMP] receive the requisite Federal Aviation Administration ("FAA") approval and secure the necessary property interests, they will install the Obstacle Collision Avoidance System ("OCAS"), which will essentially eliminate night time lighting." GMP Brief pp.3-4 (internal citation and quotation marks omitted).

GMP has not yet submitted any permit applications with the FAA for the OCAS system. *Pughe Rebuttal p.5*. The project's lighting needs to be mitigated regardless of the availability of the OCAS system or it would still be unduly adverse. *Kane Trial Testimony 2/9/11 p.86*. Contrary to GMP's claims, if the OCAS system is not possible for the project site, the undue adverse impacts caused by this nighttime lighting are not "adequately offset by the decommissioning and re-vegetation requirements" described in GMP's proposed decision. *See p.47*. One cannot mitigate present undue adverse impacts caused by lighting through future decommissioning and re-vegetation. Once the project is decommissioned, which may be 50-100 years in the future, there will be no turbines and therefore no turbine lights. *See Sorenson Trial Testimony 2/24/11 p.198* (referring to the fact that the turbines may be repowered well beyond the immediate 25 year span and

that the impacts may not be reduced until then). Furthermore, re-vegetation is part of the mitigation requirements for ANR.⁷ While it may reduce the impacts from the miles of roads created, it does nothing to mitigate for the blinking lights in the rural night sky. This argument is nonsensical.

Given the extent of the undue adverse impact this project will cause, to our family and to hundreds of people throughout the viewshed (not to mention to the tourists who come here for unspoiled natural beauty- and whom Mr. Raphael neglected to account for in his report), the incomplete and faulty analysis of GMP's aesthetics witness, the Board should condition granting a CPG on requiring that GMP implement the OCAS system.

C. NOISE:

In its brief, GMP continues to downplay the impacts of noise on the people like us, who will neighbor the industrial turbines. GMP's noise analysis was incomplete,⁸ and their continued dismissiveness of the impacts on the people like us who will spend every day of their lives neighboring 21 459 foot tall industrial turbines, should prove to the Board that they do not care about the impacts of this project on human beings.

GMP dismisses the noise impacts similarly downplaying the number of people who live in proximity, adding the conclusory statements that the turbines will operate in a manner consistent with the Board's standards and that noise levels at those standards are not shocking or offensive. "Although there was much testimony concerning background sound levels and noise levels associated with various turbine models (including the

⁷ In fact, there is no time limit before the ridgeline is allowed to re-vegetate. Sorenson Trial Testimony 2/24/11 pp.198-199.

⁸ While GMP performed no monitoring of the Brooks property or how the turbines would affect us, Mr. Kaliski's analysis was faulty in many critical respects that follow a disturbing pattern. They all tend to diminish the noise impact of the turbines on human beings living nearest to them. Rather than repeat them here, the Brooks family adopts the discussions of LMG and Albany-Craftsbury.

impact of Noise Reduction Operation ("NRO")), these issues are less important because whatever the predicted noise output or current ambient noise levels, the turbines will have to comply with the standard set by the Board." GMP brief p.9. There is no testimony as to how GMP will ensure that the turbines can effectively reduce noise in the NRO mode, given that this would be the first turbine project in Vermont dependent on NRO, Kane Surrebuttal p.15, and no plan for the implementation of the NRO mode has been proposed by or evaluated by the Board. *See* Kaliski Trial Testimony 2/22/11 pp.155-156.

In fact, GMP mocks opponents by likening this prior standard to the noise at a library. GMP Brief p.11. While in and of itself, the noise at a library is not shocking or offensive, which was the context in which Mr. Bloomberg responded to GMP's question, a noise level cannot be analyzed in a vacuum. Given that the monitored existing noise level in the Lowell area is lower than 16 decibels, the average noise in a library would exceed this by at least 15 decibels, and the Board's prior noise standard would exceed this level by at least 30 decibels. Kaliski Rebuttal p.9 (correcting Exhibit-Pet-KHK-2, Table 2). Since the witnesses all agreed that a 10 decibel increase would be shocking or offensive, GMP's argument is disingenuous and completely disregards the existing background that residents in the project area are used to.⁹ Unlike people going to a library for a certain duration or purpose, my family lives in our home. We cannot escape

⁹ An increase of only 5 decibels above background would be clearly noticeable Kaliski Trial Testimony, 2/22/11 p. 44, and result in expected widespread complaints. Blomberg Pre Filed Testimony, p.7; Blomberg Surrebuttal, pp.2 and 23. An increase of 10 decibels would be clearly audible. Kaliski Trial Testimony 2/22/11 p.10, and create the expectation of vigorous community reaction. Blomberg Pre Filed Testimony at 7. Moreover, levels exceeding 35 dBA would risk sleep loss, since sleep interference begins at 30 dBA *See* Blomberg Surrebuttal, pp.13 and 20, Lovko Rebuttal p.4; *and* James Pre Filed Testimony p.20 (referencing WHO).

it or move elsewhere. We cannot even hide in our bedroom to escape the noise of the turbines.

Furthermore, GMP's own experts concurred with experts Lovko, James, and Blomberg, that some people will be more impacted by the turbines' noise. Kaliski Trial Testimony 2/22/11 p.134; McCunney Trial Testimony 2/10/11 p.129. As a sufferer of Parkinsons, which is a progressive disease, the noise of the turbines will cause me heightened undue adverse impacts. Yet, GMP failed to perform any analysis on this issue. Kaliski Trial Testimony 2/22/11 p.134. Rather, it seems to downplay this fact just as it downplays "annoyance" as a subjective reaction rather than as a health effect as recognized by WHO. *See* McCunney Trial Testimony 2/10/11 p.25 (acknowledging that WHO recognizes annoyance as a critical health effect); *see also* DPS brief at 28.

Although GMP concedes that "[t]he critical noise-related issue in this case is whether the Board's standard should be changed," GMP brief p.9, GMP does not state that the *reason* non-petitioners stress that the Board's standard should be changed is because in this case, the Board's prior noise standard is not protective of human health nor of undue adverse impacts due to noise. As explained above, it would permit noise to exceed existing background levels by upto 30 decibels. The 45 exterior standard in no way guarantees a 30 interior standard, as acknowledged by Dr. McCunney, and since turbine noise fluctuates, the effects may be even greater, *see* Kaliski Trial Testimony 2/22/11 p.156; McCunney Trial Testimony 2/10/11 pp.165; 56-57; James Pre Filed Testimony pp.4, 17, and given that, according to GMP, the Brooks family's property line is only 313 feet from the turbines, employing a 45 dBA averaging standard at the

residence will mean that much of our property cannot be used either for business or for enjoyment.

GMP dismisses the need in this case for a lower noise standard despite the fact that turbine noise creates serious direct and indirect health impacts. *See* Blomberg Pre Filed Testimony pp.4-5, Surrebuttal pp.12-14, 20; James Pre Filed Testimony pp.12-13, Rebuttal pp.2,4, Surrebuttal pp.3,8,13; Lovko Rebuttal pp. 2-11, Surrebuttal pp.1-16. “There is clear and consistent evidence in peer reviewed literature that people start to suffer adverse health effects” at levels below 45 dBA. Lovko Surrebuttal at 2, and negative indirect health effects can be caused by noise as low as 30 decibels in the bedroom. Irwin Trial Testimony 2/24/11 p.67.¹⁰ Moreover, “In 1999 [WHO] stated that when there's a dominance of low frequency sound that adverse health effects are a serious concern, and this seems to be continuously overlooked when people talk about the WHO documents.” James Trial Testimony 2/23/2011 pp.55-56. a dominance of low frequency sound produced by wind turbines, yet Mr. Kaliski did not show any modeling results in his supplemental report (Exhibit-Pet-KHK-2 Supp) for low frequency noise below 31 Hz (and 63 Hz for two of the proposed turbines). Kaliski Trial Testimony 2/22/11 p.27.

Ironically, levels of more than 35 dBA would exceed what GMP's expert McCunney himself would find acceptable for his home. ALB-Cross-7 at 37-38; McCunney Trial Testimony 2/10/11 p.104. Why should the residents proximate to the project be forced to endure noise 10 decibels *above* this limit?

¹⁰ The figure of 15 decibel attenuation from outside to inside varies based on the construction of the house, its age, the quality of the windows, and lots of other factors. McCunney Trial Testimony 2/10/11 p.165.

Given that the Brooks family uses a yurt for part of their residence, the 15 decibel attenuation mentioned does not apply; the 45 decibels outside will be 45 decibels inside.

As with safety, GMP is using the Brooks' property as a buffer. This means we will not be able to use our property as we should be able to but will be restricted by safety and health reasons. In addition to the undue adverse impacts we will endure in our house, we will also endure them mostly everywhere on our property. Unlike Mr. Raphael's hypothetical person who can "turn away" or "go elsewhere", we cannot. . Our ears don't have lids. They work whether we are conscious or not, and the WHO data presented by the developer shows that the noise will be in the range to cause sleep interference at our home.

Finally, GMP has failed to give the Board any evidence that the NRO will protect the Brooks family's health or the aesthetics from the impacts of noise. Only during cross examination of Mr. Kaliski, did it become clear the extent that GMP will need to use NRO. Kaliski 2/22/11 pp.210-211. Given the strong possibility that the noise will exceed the ability of NRO to effectively quiet the turbines, this omission by GMP should cause the Board concern, especially when compounded by the numerous other aspects of this project that GMP has failed to divulge, study, and/or plan.

Accordingly, the Board should deny GMP a CPG because there is insufficient evidence in the record proving that the proposed project meets statutory criteria relating to noise.

D. PROPERTY VALUES

Focusing solely on one study presented by Mr. Kavet to substantiate its claims, in its brief, GMP dismisses the possibility that the project could negatively impact property values. Under *Quechee* if there is an available mitigating step that a reasonable person would take but it is not taken, then there is an undue impact. Raphael Trial Testimony

2/8/11 p.218. There could be individual properties that have negative impacts, and GMP should compensate those homeowners who are impacted. Fair mitigation for impacts would be appropriate. Kavet Trial Testimony 2/4/11 pp.119-120; Pion 2/4/11 p.53.

GMP's real estate expert's findings of no devaluation should be disregarded because he provided incomplete analysis in his report. Mr. Kavet claims that he performed an extensive literature review of 30 or 40 studies, yet he only found two or three to be worth using to show no loss of property values. Kavet, Trial Testimony 2/4/11 p.104. Although Mr. Kavet admitted that models could be manipulated to magnify the desired impact, he did not look at the data underlying these models to confirm whether or not they are biased. 2/4/11 pp.112-113.¹¹ He omitted any reference to impacts on vacation homes. *See* Exhibit-GMP-TK-2. In fact, he did not even know how many residences were in Albany or how many vacation homes, hunting camps or lakeside camps were in within 10 miles of the project site. Kavet 2/4/11 p.96.

Contrary to the assertions made by GMP's real estate expert, credible literature has shown that 25% to 40% of a home's value can be lost due to the proximity of Industrial Wind Turbines, with some instances of total loss. Exhibit Day 8 p.5. Furthermore, DPS witness Becker drew a contrary conclusion from Mr. Kavet regarding the loss in value to the properties closest to the wind project. Becker Pre Filed Testimony p.6; Exhibit-DPS-JB-1. Mr. Becker chose residential structures located within three miles of the project based on the fact that they would suffer an adverse undue impact. This data showed 371 residential structures spread across four towns with a potential aggregate loss of value in excess of \$11 million. Becker Pre Filed Testimony p.7; Exhibit-DPS-JB-1.

¹¹ In fact, no one but the authors themselves have reviewed this data; nor has the report itself been published. Kavet at 112-113.

My family's property line is 313 feet from the turbines. *See* GMP-Exhibit-A

2/23/11 D18. I run my business, "DBA Laughing Brooks Farm and Forest" from my home. A sugar house is being built, and I have cleared land for pasture and garden; I am creating trails with views of the ridgeline and wetland habitat: all of this work is to create a working, remote farm for tourism. Brooks Pre Filed Testimony p.2.¹² Nowhere in its testimony or brief concerning economic impact does GMP take into consideration the loss of tourist dollars that this project might cause, nor the number of employees who might lose their jobs if tourism is negatively affected. By their witness's own admission, GMP conducted no analysis of how the turbines would affect tourism that is focused on and driven by quiet, pristine wilderness. The tourist aspect of my business is 100% based on a remote and quiet place with views of the ridgeline.

Ironically, given this lack of data, and coupled with GMP's own repeated assertions that there will be no loss in value, they insistently refuse to provide landowners with property value guarantees. *See* GMP brief p.25 #112. If GMP is so certain that property values will not decrease, then why not provide the guarantees, especially as a "good neighbor"? If GMP is wrong, then, as Mr. Kavet, Mr. Pion, and many other witnesses agree, losses should be compensated. Accordingly, the Board should require GMP to provide property value guarantees.

E. ENVIRONMENT/NATURAL RESOURCES:

Despite GMP's conclusory statement that "The Project will meet all applicable health and environmental conservation regulations regarding the reduction of the quality of ground or surface waters flowing through or upon headwaters areas" and its two lines

¹² Even Mr. Kavet agrees that if you are going to Lowell for tourism experience, you are going to a pristine and natural area. Kavet Trial Testimony 2/4/11 p.142.

admitting that portions of the project will be on steep slopes and at elevations above 1500 feet, GMP proposed decision pp.35-36, the Board should review the extensive impact of this project on headwaters, because the unavoidable fact is that what happens over 4 miles of ridgeline will impact everything below. The MOU between GMP AND ANR does nothing to mitigate high elevation wetlands and cannot change the effect that this project will have.

The entire Lowell Mountain ridgeline constitutes headwaters; therefore, headwaters cover the project site. J. Nelson Trial Testimony 2/24/11 pp.257-258. The project is located in an area that meets one or more of the headwaters criteria. Nelson Pre Filed Testimony pp.10, 19-20. GMP's witness Mr. Jewkes agreed that one of the concerns when constructing and operating an industrial development on a ridgeline is the impact to the streams at the site, Jewkes Trial Testimony 2/3/11 p.215. The Seaver branch of the Missisquoi River runs through some of the proposed turbines and traverses the Brooks property. *See* GMP's KCW Proposed Mitigation Areas 3-2-11 (labeled).

Also, this project has not yet received permits from the Agency of Natural Resources, nor from the Army Corps of Engineers, nor Section 401 Water Quality Certification, all of which are necessary to ensure, among other things, compliance with the Vermont Water Quality Standards. However, GMP is relying on being granted these permits to meet various statutory criteria, including 10 V.S.A. §6086 (a)(1)(A) (headwaters), 10 V.S.A. §6086(a)(1)(B) (waste disposal), 10 V.S.A. §6086(a)(1)(E) (streams), and 10 V.S.A. §6086(a)(4) (soil erosion). *See* Morrison Trial Testimony 2/24/11 p.152. The specifications required must be approved by ANR. There is nothing in GMP's application before the Board that guarantees these statutory sections will be

met. Of greater concern, the project as currently proposed by GMP will allow 14 acres of concurrent disturbance even though the maximum amount of concurrent disturbance allowed by ANR for a high-risk project is 7 acres. Burke Trial Testimony 2/24/11 pp. 171-173.

In addition to the headwaters, high elevation wetlands will be impacted permanently. Jewkes Trial Testimony 2/3/11 p.221; Exh.-Pet-JAN-2 Appendix 1 (Second Supplemental), notes 6,7. These wetlands are critical to water quality. Morrison Surrebuttal p.4. The wetlands along the ridgeline act as functional headwaters and are a critical transition between groundwater and surface water. Morrison Surrebuttal p.3. Headwater wetlands moderate water temperature and contribute organic matter to the stream, both of which are critical to stream biota. *Id.* Impacts that occur at the beginning of a stream can affect the quality and aquatic biota downstream. Indirect impacts to the functions and values of these functional headwater wetlands will also be caused by activities such as clearing and grading occurring in close proximity to these wetlands. Morrison Surrebuttal at 3.

GMP has failed to address adequately the extent of adverse impact its project will have on water, wetlands and ecosystems, all of which, as a review of a map will confirm, may have severe impacts on the 900 acre Brooks property. Further, GMP's proposed wetlands mitigation is inadequate. *See* Morrison Trial Testimony 2/24/11 pp.151,155. It is possible to lose function in an ecosystem if these features are consistently altered and not compensated for. Morrison Surrebuttal p.4. Given the abundance of water and wetlands that the Brooks' property hosts, and the extent of impact from the project, (this project will change 27 acres of forest into impervious surface. Burke Pre Filed Testimony

p.6), the lack of sufficient safeguards in the stormwater permit applications, and the lack of any final plans before the Board that would satisfy the above mentioned statutory criteria, the Board should deny a CPG.

Not only will impact to waters be unduly adverse in their own right, but also, this project will have a severe impact on wildlife and habitat due to its scale and its direct and secondary effects. See generally the trial testimony of Austin (2/7/11) and Sorenson (2/24/11). GMP proposes, “an enormous project in a remote, undisturbed environment,” that would fragment the interior habitat of the affected area. It is undisputed that “there will be significant and profound fragmentation effects from a project of this scale.” Austin Trial Testimony 2/7/11 pp.177-178. It is a commonly known fact that deforestation affects water quality. The Lowell Mountain ridgeline is part of 29,680 acres comprising the 12th largest uninterrupted natural area (habitat block) in Vermont’s Northern Forest. Wallin, Trial Testimony 2/7/11 p.62; Sorenson Pre Filed Testimony p.19, Trial Testimony 2/24/11 p.217; Pughe Rebuttal p.2.¹³ The extent of devastation this project will cause is highlighted by the fact that it will eliminate a Montane Spruce forest, a state significant natural area: this natural area will not recover; it will no longer be considered state significant. Sorenson Trial Testimony 2/24/11 p.194; Pre Filed Testimony p.14. Even after the GMP/ANR MOU is implemented, re-establishing the degraded forest likely is not possible due to the extent of disturbance. Sorenson Pre Filed Testimony p.29; Trial Testimony pp.217,194.

¹³ Just as the impacts to the State Significant area cannot be reversed, suffice it to say that there will be short-term, long-term, and some permanent impacts extending to habitat and water quality (as well as to animal species), the true extent of which will not be known until after the project has ended. By then, it may be too late to reverse these impacts.

Even with the two proposed MOUs between ANR and GMP, many critical questions remain unanswered. *See* LMG's Proposed Findings of Fact pp.10-17. To date, GMP has not met all of ANR's concerns because the proposed ridgeline easement does not protect the entire ridgeline where the turbines will be. Sorenson Trial Testimony 2/24/11 pp.208-209. Furthermore, many specifics needed for the MOU, presented on the last day of the hearings, are missing. Given that ANR itself stated on cross-examination that, if ANR and GMP cannot agree on the details of the plans, the undue adverse impacts will remain, and the project should not go forward. Sorenson 2/24/11 pp.207-208. Given the enormity of permanent damage this project will cause, the inadequacy of the proposed MOU and the significance of the unanswered questions in the record, the Board should deny GMP a CPG.

CONCLUSION

Clearly, my family is insignificant to GMP. That is clear from GMP's disregard for the details of this case. The Board should not disregard these details, which will have such an adverse impact on the Lowell area, a landscape, which draws the tourists on whom our livelihoods depend. Tourists come for the peace, quiet, and natural beauty. If GMP has its way, all of that will be gone. *See* Brooks Surrebuttal p.1.

Both Jim Blair and myself have businesses which depend on the rural, quiet, unspoiled atmosphere; both of our businesses provide or will provide substantial jobs to local residents; both of our businesses provide significant benefits to the local economy through jobs we provide and through the influx of tourist dollars. Brooks Pre Filed Testimony p2; LMG-Blair Pre Filed Testimony pp.2-4, Exhibit-LMG-Blair 2. Our neighbors, the Clarks and the Willeys, stand to lose their sole economic assets because of

this project.¹⁴ When do all of us add up to be enough to matter? The Brooks family's property is our income, our home, and our source for retirement. I cannot afford to start over at my age or lose the value I have invested. If GMP's project is approved, I will lose everything my family has worked for. Brooks Pre Filed Testimony p.2.

As presented to the Board, GMP's project contains many risks to the Brooks family, risks which the Board should not be willing to accept, risks which the Board members most likely would not accept for their families and their property. These risks include those based on construction, safety, noise, the environment, and to our sole economic asset, our property itself. Part of the reason we moved back to Vermont after our time serving people overseas was its fidelity to its natural beauty through strict laws prohibiting billboards, arches, ridge line roads, and the creation of Act 250. These carefully crafted and strictly enforced laws are in severe jeopardy of being bulldozed in the name of renewable energy, without anyone taking the time to review the cumulative impact of industrial wind on Vermont's people and her mountains. There are viable alternatives that can achieve the same goals at the same or similar monetary costs with far fewer overall costs to our state and her people.

Although GMP continually tries to minimize us and what we will endure, "there is no number that should be used as a cut off regarding how many people should be protected." Kane Trial Testimony 2/9/11 p.73. GMP's experts could not answer the question as to when it is too many people being impacted by their project. The question we pose to the Board is when do the costs- environmental, aesthetic, health- outweigh the

¹⁴ The Clarks and Willeys have built up their businesses, and like the Brooks family and Mr. Blair, their equity rests in these investments. LMG Clark Pre Filed Testimony pp.1-2; LMG Willey Pre Filed Testimony p.1; LMG Blair Pre Filed Testimony p.1; Brooks Pre Filed Testimony p.2.

unproven benefits repeatedly stated by GMP? Does SPEED legislation make it acceptable to so drastically and so permanently alter our environment?

Respectfully submitted,

Jack Brooks

APPENDIX A

GMP's Exhibit A 2/23/11

SYMBOL	DISCRIPTION	DISTANCE TO PROPERTY
D1	Turbine 1 to Warner Property	177'
D2	Turbine 5 to Nelson Property	213'
D3	Turbine 6 to Nelson Property	230'
D4	Turbine 7 to Nelson Property	1105'
D5	Turbine 8 to Nelson Property	586'
D6	Turbine 9 to Nelson Property	1307'
D7	Turbine 10 to Nelson Property	1362'
D8	Turbine 11 to Nelson Property	1301'
D9	Turbine 12 to Nelson Property	1029'
D10	Turbine 13 to Nelson Property	1195'
D11	Turbine 14 to Nelson Property	1719'
D12	Turbine 16 to Jackson Property	981'
D13	Turbine 17 to Jackson Property	1331'
D14	Turbine 18 to Campo Property	2225'
D15	Turbine 19 to Wind Blown Energy, LLC Property	2578'
D16	Turbine 20 to Hoffman Property	2603'
D17	Turbine 21 to Corrow Property	2913'
D18	Turbine 21 to Brooks Property in the Town of Eden, VT	333'
D19	Turbine 21 to Green Crest INC. in the Town of Eden, VT	186'
D20	Turbine 21 to Vermont Land Trust Inc. & The Nature Conservancy	151'
D21	Turbine 20 to Vermont Land Trust Inc. & The Nature Conservancy	188'
D22	Turbine 19 to Vermont Land Trust Inc. & The Nature Conservancy	210'
D23	Turbine 17 to Vermont Land Trust Inc. & The Nature Conservancy	575'
D24	Turbine 16 to Vermont Land Trust Inc. & The Nature Conservancy	938'
D25	Turbine 15 to Vermont Land Trust Inc. & The Nature Conservancy	490'

APPENDIX B

EXH-LMG-LB-13

Table 1: Setback Recommendations

Setback Distance	Objects of concern within the setback distance
If icing is likely at the wind turbine site: 1.5 x (Hub Height + Rotor Diameter)	Public use areas Residences Office buildings Public buildings Parking lots Public roads (more than lightly traveled) Railroads
All turbine sites: 1.1 x Tip Height ¹	Public use areas Residences Office Buildings Public Buildings Parking lots Public roads (more than lightly traveled) Railroads Sensitive above ground services ²
All turbine sites: 1.1 x Blade Length ³	Remote boundaries to property not owned by wind farm participants ⁴ No occupied structures allowed.

¹ The maximum height of any blade tip when the blade is straight up (hub height + ½ rotor diameter).

² Services that if damaged could result in significant hazard to people or the environment or extended loss of services to a significant population.

³ Use ½ rotor diameter to approximate Blade Length for this calculation.

⁴ Property boundaries to vacant areas where there is a remote chance of any future development or inhabitation during the life of the wind farm.

Table 2: Data Typically Required for Safety Review

Condition	Data Required
If icing is likely at the wind turbine site	Annual number of icing days
For winter season	Annual number of days with snow on the ground
Residences	Number of residences within recommended setback distance.
For industrial buildings (warehouse / shop)	Plot of bldg vs. turbine(s) Average number of persons in area during shift Number of work shifts per week
For open industrial areas (storage / parking lot)	Plot of area vs. turbine(s) Average number of persons in area during shift Number of shifts per week
For sports / assembly areas	Plot of area vs. turbine(s) Average number of persons in area per day Average number of hours occupied per day Number of days area occupied per week If area covered, what type of cover
For roads / waterways	Plot of road / waterway vs. turbine(s) Average number of vehicles per day Average number of persons per vehicle Type of road (residential, country, # of lanes, etc.)
For paths / trails (walk, hike, run, bike, ski)	Plot of paths / trails vs. turbine(s) Average number # of persons per day by type of presence (walk, hike, etc.) Flat or uneven / hilly terrain